WHAT IS CLAIMED IS:

1. An optical interconnection circuit board for guiding an optical signal, comprising:

a substrate having a surface;

a first clad layer having a flat surface, which is formed on the surface of the substrate;

a core layer configured to guide the optical signal in a predetermined direction, formed on the flat surface of the first clad layer and extended in the predetermined direction;

a second clad layer formed on the core layer; and

a first mirror segment having a first mirror face configured to reflect the optical signal guided in the core layer through the second clad layer to the outside thereof, the first mirror segment being formed on the flat surface of the first clad layer and the mirror face being contacted to the core layer.

2. The optical interconnection circuit board according to claim 1 further comprising:

a second mirror segment having a second mirror face configured to reflect the optical signal into the core layer, the optical signal being incident on the second mirror face from the outside of the circuit board through the second clad layer, the second mirror segment being formed on the flat surface of the first clad layer and the mirror face being contacted to the core layer.

3. An optical interconnection circuit board for guiding an optical signal, comprising:

a substrate having a surface;

a first clad layer having a flat surface, which is formed on the surface of the substrate;

a core layer configured to guide the optical signal in a predetermined direction, formed on the flat surface of the first clad layer and extended in the predetermined direction;

a second clad layer formed on the core layer;

a first termination mirror segment having a first tip end and a first mirror face configured to reflect the optical signal guided in the core layer through the second clad layer to the outside thereof, the first termination mirror segment being formed on the flat surface of the first clad layer and extending across the core layer in a lateral direction crossing the predetermined direction, the first tip end contacting the second clad layer, and the first mirror face being contacted to the core layer;

a second termination mirror segment having a second tip end and a second mirror face configured to reflect the optical signal into the core layer, the optical signal being incident on the second mirror segment from the outside of the circuit board through the second clad layer, the second mirror segment being formed on the flat surface of the first clad layer and

extending across the core layer in the lateral direction, the second tip end contacting the second clad layer, and the second mirror face being contacted to the core layer; and

a first splitting mirror segment having a third mirror face configured to reflect a part of the optical signal guided from the second termination mirror segment through the second clad layer to the outside thereof and to allow the remaining optical signal to pass over the first splitting mirror segment, the first splitting mirror segment being formed on the flat surface of the first clad layer between the first and second termination mirror segment, and the third mirror face being contacted to the core layer.

4. The optical interconnection circuit board according to claim 3, further comprising an optical absorbing segment configured to absorb the guided optical signal reflected from the first termination mirror segment, the optical absorbing segment being formed on the second clad layer.

5. The optical interconnection circuit board according to claim 3, further comprising a cover layer having a coupling portion configured to align the optical interconnection circuit board with an optical unit, the cover layer being formed on the second clad layer.

6. The optical interconnection circuit board

according to claim 3, further comprising a shielding layer configured to prevent an optical noise from entering into the core layer, the shielding layer being formed on the second clad layer.

7. The optical interconnection circuit board according to claim 3, wherein each of the first and second terminating mirror segment and the splitting mirror segment is made of metal and has a reflection face configured to reflect the optical signal.

8. The optical interconnection circuit board according to claim 3, further comprising:

an electric circuit configured to generate an electrical signal, wherein each of the first and second terminating mirror segment and the splitting mirror segment is made of electric conductive metal and is electrically connected to the electric circuit.

9. The optical interconnection circuit board according to claim 3, wherein the core layer has a first refractive index, and each of the first and second terminating mirror segment and the splitting mirror segment has a second refractive index, and has a reflection face configured to totally reflect the optical signal, the second refractive index being smaller than the first refractive index.

10. The optical interconnection circuit board according to claim 3, wherein the core layer has cavities formed therein, and each of the first and

second terminating mirror segments and the splitting mirror segment includes an interface configured to reflect the optical signal, the interface being provided between the cavity and the core layer.

11. The optical interconnection circuit board according to claim 3, wherein the first and second termination mirror segments have a first width in the lateral direction and a first height, and the first splitting mirror segment have a second width smaller than the first width and a second height substantially same as the first height.

12. The optical interconnection circuit board according to claim 3, wherein the first and second termination mirror segments have a first width in the lateral direction and a first height, and the first splitting mirror segment have a second height smaller than the first height.

13. An optical interconnection circuit board for guiding an optical signal, comprising:

a substrate having a surface;

a first clad layer having a flat surface, which is formed on the surface of the substrate;

a core layer configured to guide the optical signal in a predetermined direction, formed on the flat surface of the first clad layer and extended in the predetermined direction;

a second clad layer formed on the core layer;

a first splitting mirror segment having a first mirror face configured to split the optical signal into first and second optical signal components and guide the first and second optical signal components into the core layer, the optical signal being incident on the first splitting mirror from the outside of the circuit board through the second clad layer, the first splitting mirror segment being formed on the flat surface of the first clad layer, and the first mirror face being contacted to the core layer;

a first termination mirror segment having a first tip and a second mirror face configured to reflect the first optical signal component guided in the core layer through the second clad layer to the outside thereof, the first termination mirror segment being formed on the first clad layer and extending across the core layer in a lateral direction crossing the predetermined direction, the first tip end contacting the second clad layer, and the second mirror face being contacted to the core layer; and

a second termination mirror segment having a second tip and a third mirror face configured to reflect the second optical signal component guided in the core layer to the optical unit through the second clad layer, the second termination mirror segment being formed on the first clad layer and extending across the core layer in the lateral direction, the second tip end

contacting the second clad layer, and the third mirror face being contacted to the core layer.

14. The optical interconnection circuit board according to claim 13, further comprising an optical absorbing segment configured to absorb the first optical signal component reflected from the first termination mirror segment, the optical absorbing segment being formed on the second clad layer.

15. The optical interconnection circuit board according to claim 13, further comprising a cover layer having a coupling portion configured to align the optical interconnection circuit board with first and second optical units, the cover layer being formed on the second clad layer.

16. The optical interconnection circuit board according to claim 13, further comprising a shielding layer configured to prevent an optical noise from entering into the core layer, the shielding layer being formed on the second clad layer.

17. The optical interconnection circuit board according to claim 13, wherein each of the first and second terminating mirror segment and the splitting mirror segment is made of metal and has a reflection face configured to reflect the optical signal.

18. The optical interconnection circuit board according to claim 13, further comprising:

an electric circuit configured to generate

an electrical signal, wherein each of the first and second terminating mirror segment and the splitting mirror segment is made of electric conductive metal and is electrically connected to the electric circuit.

19. The optical interconnection circuit board according to claim 13, wherein the core layer has a first refractive index, and each of the first and second terminating mirror segment and the splitting mirror segment has a second refractive index, and has a reflection face configured to totally reflect the corresponding one of the first and second optical signal components, the second refractive index being smaller than the first refractive index.

20. The optical interconnection circuit board according to claim 13, wherein the core layer has cavities formed therein, and each of the first and second terminating mirror segments and the splitting mirror segment includes an interface configured to reflect the corresponding one of the first and second optical signal components, the interface being provided between the cavity and the core layer.

21. The optical interconnection circuit board according to claim 13, wherein the first and second termination mirror segments have a first width in the lateral direction and a first height, and the first splitting mirror segment have a second width smaller than the first width and a second height substantially

same as the first height.

22. The optical interconnection circuit board according to claim 13, wherein the first and second termination mirror segments have a first width in the lateral direction and a first height, and the first splitting mirror segment have a second height smaller than the first height.

23. An optical interconnection circuit board for changing an optical path of an optical signal, comprising:

a substrate having a surface;

a first clad layer having a flat surface, which is formed on the surface of the substrate;

a first core segment configured to guide the optical signal in a first predetermined direction, formed on the flat surface of the first clad layer and extended in the first predetermined direction;

a second core segment configured to guide the optical signal in a second predetermined direction different from the first predetermined direction, formed on the flat surface of the first clad layer and extended in the second predetermined direction;

an optical coupling mirror configured to optically couple the first core segment to the second core segment, the optical signal guided in the first core segment being reflected from the optical coupling mirror, the optical coupling mirror being formed on the

flat surface of the first clad layer and contacted to the first and second core segments, and extending in the third predetermined direction different from the first and second directions;

a second clad layer formed on the first and second core segments and the optical coupling mirror; and

a reflection layer formed on the second clad layer, configured to reflect the optical signal from the optical coupling mirror and redirect the optical signal to the optical coupling mirror through the second clad layer, the redirected optical signal being reflected from the optical coupling mirror into the second core segment and propagated in the second core segment.

24. The optical interconnection circuit board according to claim 23, wherein the optical coupling mirror has a reflection face inclined at a predetermined angle to the first and second predetermined directions and the first and second core segments are so extended as to cross each other.

25. A method of manufacturing an optical interconnection circuit board for guiding an optical signal, comprising:

preparing a substrate having a surface;

forming a first clad layer having a flat surface, on the surface of the substrate;

forming a mirror layer on the first clad layer;

etching the mirror layer to form a mirror segment having a reflection face thereon and having a first height;

forming a core segment on the first clad layer, the core segment having a second height not greater than the first height and being so extended as to have a predetermined optical circuit pattern; and

covering the core segment with a second clad layer.

26. The method according to calm 25, further comprising:

forming a shield layer on the second clad layer;

forming a cover layer on the shield layer, the cover layer having a coupling hole configured to allow the optical signal to pass therethrough; and

etching the shield layer under the coupling hole of the cover layer to form a coupling portion configured to align the optical interconnection circuit board with the optical unit.

27. A method of manufacturing an optical interconnection circuit board for guiding an optical signal, comprising

preparing a substrate having a surface;

forming a first clad layer having a flat surface, on the surface of the substrate;

forming a mask layer on the first clad layer, the mask layer having a opening region;

depositing a mirror layer on the first clad layer under the opening region of the mask layer to form a mirror on the first clad layer, the mirror having a reflection face thereon and having a first height;

forming a core segment on the first clad layer, the core segment having a second height not greater than the first height and being so extended as to have a predetermined optical circuit pattern; and

covering the core segment with a second clad layer.

28. The method according to claim 27, further comprising:

forming a shield layer on the second clad layer;

forming a cover layer on the shield layer, the cover layer having a coupling hole configured to allow the optical signal to pass therethrough; and

etching the shield layer under the coupling hole of the cover layer to form a coupling portion configured to align the optical interconnection circuit board with the optical unit.